



PATENT  
Attorney Docket No. 29610/CDT471

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicants:	)	I hereby certify that this paper (along
	)	with any paper referred to as being
Jonathan J. Halls et al.	)	attached or enclosed) is being deposited
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Serial No. 10/579,050	)	shown below with sufficient postage as
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Appl. No. PCT/GB2004/004883)	)	Patents, P.O. Box 1450, Alexandria,
	)	VA 22313-1450.
For: Optical Device	)	
	)	July 8, 2011
Group Art Unit: 1712	)	
	)	
Examiner: Austin Murata	)	
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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The applicants hereby request that a panel of examiners formally review the legal and factual bases of the rejections in the above-referenced application prior to the filing of an appeal brief. The applicants respectfully submit that the rejections are inadequate for the reasons concisely described herein.

Submitted herewith is a Notice of Appeal.

Claims 1, 3-10, and 12-29 are pending in this application but claim 21 has been withdrawn from consideration. All considered claims 1, 3-10, 12-20, and 22-29 stand rejected. More specifically, claims 1, 3-10, 12-14, 16-18, 20, and 22-25 remain rejected under 35 USC §102(b) as assertedly anticipated by WO 99/48160 to Burroughes ("Burroughes") and claims 15, 19, and 26-29 remain rejected under 35 USC §103(a) as assertedly obvious over Burroughes.

## **The 35 USC § 102(b) Rejections Are Traversed**

“Section 102 embodies the concept of novelty—if a device or process has been previously invented (and disclosed to the public), then it is not new, and therefore the claimed invention is “anticipated by the prior invention.” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Thus, a determination that a claim is anticipated under 35 USC § 102 involves two analytical steps.

First, the Patent Office must interpret the claim language, where necessary, to ascertain its meaning and scope. In interpreting the claim language, the Patent Office is permitted to attribute to the claims only their broadest *reasonable* meaning as understood by persons having ordinary skill in the art, considered in view of the entire disclosure of the specification. *See In re Buszard*, 504 F.3d 1364 (Fed. Cir. 2007) (reversing a Patent Office decision that applied an unreasonably broad interpretation to a claim); *see also, In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

Second, the Patent Office must compare the construed claim to a single prior art reference and set forth factual findings that “each and every limitation is found either expressly or inherently [disclosed] in [that] single prior art reference.” *Celeritas Techs. Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998). *But, it is not simply enough that each and every limitation is found in a single prior art reference.* To anticipate, the reference “must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN*, 545 F.3d at 1369 (internal citation omitted); *see also, Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989) (“The identical invention must be shown in as complete detail as is contained in the patent claim.”).

The applicants respectfully submit that the Patent Office has incorrectly applied the standard of anticipation in this application because *Burroughes fails to disclose the elements as arranged in claims 1, 3-10, 12-14, 16-18, 20, and 22-25*. As a result, claims 1, 3-10, 12-14, 16-18, 20, and 22-25 are not anticipated by Burroughes.

Burroughes discloses an electroluminescent device comprising “a light-emissive layer comprising a mixture of a first component for accepting positive charge carriers

from the first charge carrier injecting layer; a second component for accepting negative charge carriers from the second charge carrier injecting layer; and a third, organic light-emissive component for generating light as a result of combination of charge carriers from the first and second components....” See Burroughes at page 5, second full paragraph. Burroughes does not disclose or suggest a composition comprising a first material for transporting holes and a second material for emission and transporting holes and electrons, wherein the second material is a polymer, as recited by all pending claims.

According to the Patent Office’s proposed interpretation of the claim language, the disclosure in Burroughes of either (i) a mixture of F8 and TFB or (ii) different parts of F8-TFB copolymer form the claimed “first material for transporting holes” and “second material for emission and transporting holes and electrons.” (See, for example, the paragraph bridging pages 3-4 of the action where the Office asserted that “[t]he F8 can be blended with TFB as shown in Table 2 **page 20** where the blend can optionally be made into a copolymer **page 26-27** [*sic*]. The first and second material is the same copolymer material.”)

Such a construction assumes that both F8 and TFB are hole transporting given that all pending claims recite that both the first and second materials are hole transporting. *Both F8 and TFB are not hole transporting, however.* Indeed, the Office acknowledged that F8 is electron transporting. (See, for example, the paragraph bridging pages 3-4 of the action where the Office indicated that “[t]he reference teaches in page 10 paragraph 2 that an electron transporting material can be F8 which is also light emitting (second material is also light emitting).” For this reason alone, the Patent Office’s proposed analysis fails. As a result, the applicants respectfully submit that Burroughes does not anticipate claims 1, 3-10, 12-14, 16-18, 20, and 22-25.

Further, with respect to the second proposed construction (which is also deficient because both F8 and TFB are not hole transporting), one of ordinary skill in the art would not consider a copolymer to read on a composition comprising a first material and a second material as claimed. For example, it is clear from the application description that the first and second materials are separate materials. In this respect, referring to pages 16-17 of the counterpart international (PCT) publication, a comparison is made between a copolymer comprising two different hole transporting repeat units (comparative polymer C1), and a blend of a first and second material comprising the same hole transporting

units (P1:TFB 80:20). A significant advantage is shown when the two hole transporting units are in separate materials. In view thereof, the claimed first and second materials should not and would not be interpreted to encompass a single copolymer material as proposed in the outstanding action when the claim language is considered in view of the entire disclosure of the specification as required.

Finally, while the Office also referenced (without relying upon) U.S. Patent Publication 2002/0042174 to Kunigi et al. at the paragraph bridging pages 2-3 of the outstanding action, the referenced disclosure of Kunigi merely discloses the possibility of combining two or more of a hole transporting layer, an emitting/sensing layer, and an electron conductor layer into a single layer. Kunigi does not, however, disclose or suggest combining a hole transporting material with an emissive material which is already hole-transporting and is additionally electron-transporting, as claimed.

The anticipation rejections should therefore be removed.

#### **The 35 USC § 103(a) Rejections Are Traversed**

Obviousness cannot be established by simply showing that elements of the invention were known in the art (*see KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007)), since mere identification in the prior art of each element is insufficient to establish obviousness of the subject matter *as a whole*. *See In re Kahn*, 441 F.3d 977, 986 (Fed. Cir. 2006). The Patent Office must also show that a person of ordinary skill in the art would have had a reason to combine elements in the art to arrive at the invention as claimed. *See KSR* at 417. In addition, the Patent Office must demonstrate that combining the cited art as the Office Action proposes, would lead the worker of ordinary skill in the art to the invention as claimed *as a whole* with a degree of predictability. *See* MPEP 2141. The Patent Office has not demonstrated a reason to combine the elements as claimed, nor established a degree of predictability as required.

Indeed, Burroughes fails to provide any reason why a person of ordinary skill would seek to combine a hole-transporting material with an emissive layer which is already hole-transporting and is additionally electron-transporting, as claimed.

Furthermore, as mentioned above, under any rationale used to support a conclusion of obviousness, the proposed modifications must lead to predictable results. In this case, the combination of a hole transporting material with an emissive material

which is also hole-transporting and electron-transporting leads to unexpected benefits as shown, for example, in the section entitled "Lifetime" at page 15 of the counterpart PCT application publication, which illustrates that device lifetime is increased several fold by depositing a composition comprising first and second materials, as claimed. *See also*, the sections entitled Drive Voltage, Quantum Efficiency, and TFB within an electroluminescent polymer vs. TFB as a separate material in a blend on pages 16 and 17 of the counterpart PCT application publication.

In view of the foregoing discussion, the applicants respectfully submit that there is no explicit or implicit teaching in Burroughes suggesting a method comprising the step of depositing a composition comprising first and second materials as claimed, much less any indication of predictable results for such a composition. Accordingly, a *prima facie* case of obviousness cannot be sustained, and the outstanding rejections over Burroughes should be withdrawn.

#### **CONCLUSION**

Allowance of all pending claims is respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is respectfully invited to contact the undersigned attorney at the indicated telephone number.

Respectfully submitted,

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